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Building & Highway Material Testing Laboratory

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Job No.: CTCE/BBMP/W.No.14/NCM/WMM/S-T/2016-17 16.08.2016

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	**Mr. N.C. Manjunatha,** Contractor, Bangalore.
Name of Work	Improvements to cross roads and drains at Arunodaya Hospital Mallasandra opposite BBMP office in Bagalagunte Ward No.14, BBMP, Bangalore.
Reference	BBMP/DZ/AEE/TDSD/PR/369/2016-17 Dated: 06.08.2016
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	16.08.2016

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Result : Flakiness Index = **12.85%**

Elongation Index = **13.56%**

Result : Combined Flakiness & Elongation index **26.41%**

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

Note:

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಟಿ.ದಾಸರಹಳ್ಳಿ ಉಪ-ವಿಭಾಗ
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Job No.: CTCE/BBMP/W.No.14/NCM/BM/Bitumen/2016-17 22.08.2016

BITUMEN CONTENT DETERMINATION OF BITUMINOUS MACADAM MIX

AS per IRC:SP:-1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Mr. N.C. Manjunatha,** Contractor, Bangalore.
NAME OF THE WORK	Improvements to cross roads and drains at Arunodaya Hospital Mallasandra opposite BBMP office in Bagalagunte Ward No.14, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/369/2016-17 Dated: 06.08.2016
SAMPLE I/D	Arunodaya Hospital road mallasandra, Ward No.14
DATE OF TESTING	22.08.2016

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	482.5	482
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	17.5	18.00
7. Bitumen content in %	3.50	3.60
8. Average	**3.55**	

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Job No.: CTCE/BBMP/W.No.14/NCM/BM/Bitumen/2016-17

22.08.2016

GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

As per IS2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Mr. N.C. Manjunatha,** Contractor, Bangalore.
NAME OF THE WORK	Improvements to cross roads and drains at Arunodaya Hospital Mallasandra opposite BBMP office in Bagalagunte Ward No.14, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/369/2016-17 Dated: 06.08.2016
SAMPLE I/D	Arunodaya Hospital road mallasandra, Ward No.14
DATE OF TESTING	22.08.2016

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	34.25	7.11	7.11	92.89	90-100
13.2	96.36	19.99	27.10	72.90	56-88
4.75	259.3	53.80	80.89	19.11	16-36
2.36	49.23	10.21	91.11	8.89	4-19
0.3	25.25	5.24	96.35	3.65	2-10
0.075	4.16	0.86	97.21	2.79	0-8

Þ The results indicated above are based on the tests carried	Trail 2				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0		100	100
19	35.16	7.29	7.29	92.71	90-100
13.2	79.36	16.46	23.76	76.24	56-88
4.75	263.2	54.61	78.37	21.63	16-36
2.36	53.13	11.02	89.39	10.61	4-19
0.3	26.36	5.47	94.86	5.14	2-10
0.075	10.25	2.13	96.98	3.02	0-8

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23.08.2016

BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Mr. N.C. Manjunatha,** Contractor, Bangalore.
NAME OF THE WORK	Improvements to cross roads and drains at Arunodaya Hospital Mallasandra opposite BBMP office in Bagalagunte Ward No.14, BBMP, Bangalore.
REFERENCE	AEE/Hegga/QC/ /2016-17 Dated: 16.07.2016
SAMPLE I/D	BBMP/DZ/AEE/TDSD/PR/369/2016-17 Dated: 06.08.2016
DATE OF TESTING	23.08.2016

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474	473
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26	27.00
7. Bitumen content in %	5.20	5.40
8. Average	**5.30**	

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Job No: CTCE/BBMP/W.No.14/NCM/BC/Bitumen/2016-17 23.08.2016

BITUMEN CONTENT AFTER GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

As Per IS 2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Mr. N.C. Manjunatha,** Contractor, Bangalore.
NAME OF THE WORK	Improvements to cross roads and drains at Arunodaya Hospital Mallasandra opposite BBMP office in Bagalagunte Ward No.14, BBMP, Bangalore.
REFERENCE	AEE/Hegga/QC/ /2016-17 Dated: 16.07.2016
SAMPLE I/D	BBMP/DZ/AEE/TDSD/PR/369/2016-17 Dated: 06.08.2016
DATE OF TESTING	23.08.2016

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GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	45.26	9.55	9.55	90.45	79-100
9.5	35.25	7.44	16.99	83.01	70-88
4.75	66.35	14.00	30.98	69.02	53-71
2.36	65.38	13.79	44.78	55.22	42-58
1.18	54.36	11.47	56.24	43.76	34-48
0.6	62.35	13.15	69.40	30.60	26-38
0.3	38.55	8.13	77.53	22.47	18-28
0.15	39.32	8.30	85.83	14.17	12-20
0.075	39.2	8.27	94.10	5.90	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	35.26	7.45	7.45	92.55	79-100
9.5	42.25	8.93	16.39	83.61	70-88
4.75	76.36	16.14	32.53	67.47	53-71
2.36	63.32	13.39	45.92	54.08	42-58
1.18	71.22	15.06	60.97	39.03	34-48
0.6	46.35	9.80	70.77	29.23	26-38
0.3	40.25	8.51	79.28	20.72	18-28
0.15	33.65	7.11	86.40	13.60	12-20
0.075	33.32	7.04	93.44	6.56	4-10

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